	EYFS Areas Covered **Food technology** Structures Textiles	**KS1 Areas Covered** Food Structures Textiles Mechanisms	**KS2 Areas Covered** Textiles Mechanisms Food Structures Electrical Systems	**Upper KS2 Areas Covered** Textiles Food Structures Electrical Systems

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Food Technology	<u>Making smoothies</u>
	• Communicate designs through drawings and discussion
	• Know that fruit forms part of a healthy diet
	• Name common fruits
	• Handle, smell and taste them
	• Describe their appearance, taste, texture and aroma: sweet, sour, juicy, soft, hard, crunchy, crisp
	• Identify the different parts: skin, flesh, pip, core
	• Prepare different fruits
	• Wash fruits thoroughly
	• Use a knife to chop fruit safely on a chopping board
	• Use their hands to peel fruit
	• Use a peeler to peel fruits
	• Recall key hygiene practices when handling food e.g. wash their hands; tie back their hair, wear an apron, ensure work surface and utensils are clean
	
	<u>Pumpkin seed biscuits</u>
	• Cutting the pumpkin
	• Removing the skin
	• Taking out the seeds
	• Using a blender (children to place in blender and adult to use)
	• Making a dough; mixing ingredients, rolling, cutting shape, putting in oven.
	
	<u>Mince pies</u>
	• Mixing dried fruit
	• Explaining how and why fruit is dried
	• Making a dough; mixing ingredients, rolling, cutting shape, putting in oven.
	
	<u>Strawberries dipped in melted chocolate</u>
	• Identify the different parts: skin, flesh, pip, core
	• Prepare different fruits
	• Wash fruits thoroughly
	• Use a knife to chop fruit safely on a chopping board
	• Break up and melt chocolate in microwave; mixing regularly
		<u>Fruit Salads</u>
		• Develop a dish in response to a specific design brief
		• Understand the purpose of a design brief
		• Interpret a design brief
		• Develop ideas through exploration of the different tastes, textures and appearance of fruit
		• Make decisions using a design specification
		• Communicate designs through drawings and discussion
		• Know that fruit forms part of a healthy diet
		• Name common fruits and vegetables
		• Handle, smell and taste them
		• Describe their appearance, taste, texture and aroma: sweet, sour, juicy, soft, hard, crunchy, crisp
		• Identify the different parts: skin, flesh, pip, core
		• Recall country of origin
		• Prepare different fruits
		• Wash fruits thoroughly
		• Use a knife to chop fruit safely on a chopping board
		• Use their hands to peel fruit
		• Use a peeler to peel fruits
		• Grater to grate fruit safely
		• Recognise how condiments can alter the taste of fruit e.g. sauce, syrup, sugar
		• Recall key hygiene practices when handling food e.g. wash their hands; tie back their hair, wear an apron, ensure work surface and utensils are clean
		• Select from a range of fruit and vegetables according to their characteristics (appearance, taste, texture and aroma to create their product)
		• Prepare and assemble chosen fruit to create their product
		• Evaluate how successful the recipe was, the use of foods and equipment
			<u>Dips and dippers</u>
			• evaluate different dips and dippers
			• explain why I need to eat a balance and variety of food groups to stay healthy
			• plan my own appealing dip and dippers
			• follow the food hygiene rules before and whist making my dip and dippers
			• share some ideas about what our product must include be successful
			• select and use kitchen equipment using my plan to guide me
			• taste different dips and dippers and explain which I like and why
			• tell you the jobs the different food groups do.
			• safely use a range of kitchen equipment to cut, peel, grate and chop ingredients
			• safely prepare ingredients
			• start to think about where different foods come from
			• explain why I should eat more fruit, vegetables and carbohydrates
			• evaluate my dip and dipper
			• Name the countries where different dips come from
			• measure using teaspoons and tablespoons
			• explain how I have met my design criteria
				<u>Super Salad</u>
				• Develop a dish in response to a specific design brief
				• Analyse the design brief
				• Identify the needs, preferences and interests of the target audience
				• Develop ideas through exploration of different recipes, food preparation techniques and taste tests
				• Make decisions using a design specification
				• Communicate their designs through drawings and discussion
				• Recall the different food groups:
				  ○ Fruit/Vegetables
				  ○ Carbohydrates
				  ○ Protein
				  ○ Milk and dairy
				  ○ Fats and sugars
				• Prepare fruit and vegetables
				• Master techniques introduced in Year 1 and Year 2 using a range of equipment safely e.g. knife, grater
				• Use the claw and bridge technique for cutting
				• Prepare dressings for a salad using a combination of oils, acids and seasonings
				• Measure ingredients using measuring spoons/cups
				• Combine in the correct proportions
				• Add additional fresh and processed ingredients to a salad e.g. croutons, meat, nuts etc
				• Select from a range of suitable ingredients across the food groups according to their characteristics (colour, taste, texture, use) to create their Super Salad
				• Measure and mix ingredients in the correct proportion
				• Evaluate
				• Investigate and analyse a range of existing products
				• Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
					<u>Making Wraps</u>
					• Develop a recipe response to a specific design brief
					• Analyse the design brief
					• Identify the needs, preferences and interests of the target audience
					• Identify common ingredients of healthy sandwiches
					• Develop ideas through exploration of different tastes and texture differences with different ingredients
					• Develop a design specification to guide their thinking
					• Communicate their designs through drawings and discussion
					• Cooking and nutrition
					• Recall the recommended relative proportions of the different food groups in a balanced diet:
					  ○ Fruit & Vegetables and carbohydrates
					  ○ Protein
					  ○ Fats and diary
					• Make/Cooking and nutrition
					• Combine ingredients to make a spread (i.e grains, pulses...)
					• Prepare separate ingredients using appropriate utensils and methods learnt in previous years
					• Measure ingredients to the nearest gram accurately
					• Use a mixing bowl to combine ingredients
					• Select from a range of suitable ingredients across the food groups according to their characteristics (colour, taste, texture, use) to create a chosen product following a design brief
					• Prepare the wrap filling.
					• Evaluate
					• Investigate and analyse a range of existing products
					• Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
						<u>Seasonal Soup</u>
						• Develop a recipe response to a specific design brief
						• Analyse the design brief
						• Identify the needs, preferences and interests of the target audience
						• Develop ideas through exploration of different recipes, food preparation techniques and taste tests
						• Develop a design specification to guide their thinking
						• Communicate their designs through drawings and discussion
						• Follow and refine a recipe to make soup
						• Use knowledge of a healthy diet, and the different food groups to select which type(s) will be included in their soup.
						• Select autumnal foods to be included in their soup depending upon their texture, appearance and aroma: pumpkin, sweet potato, leek, broccoli, tomato, croutons, cauliflower, potatoes, garlic, onions
						• Understand seasonality and the source of different food products- linked with the Christmas season (see above).
						• Use vegetable preparation techniques developed in previous years.
						• Cook vegetables
						  ○ boiling in a pan
						  ○ roasting in an oven
						  ○ Blend cooked vegetables using a blender
						  ○ Use Seasoning: black pepper, sea-salt, mixed herbs, thyme
						  ○ Re-heat ingredients to prepare to serve soup
						• To evaluate the success of their recipe – how did it taste? What was the texture like? What could have been improved?
						• To evaluate though the use of a questionnaire gleaning the ideas/opinions of their peers – drawing upon the views of others to improve their work
							<u>Making Bread</u>
							• Respond to a specific design brief
							• Research the needs, preferences and interests of the target audience
							• Understand the different food groups
							• Use knowledge of seasonality to select produce for recipe
							• Follow and refine a given recipe
							• Apply food preparation techniques
							• Correctly weigh ingredients in grams, ml, tsp and tbsp quantities
							• Use a range of kitchen utensils correctly
							• Use a range of kitchen utensils safely
							• Understand that scaling a recipe up/down a produces more/less food
							• Evaluate the success of their recipe

	• Explain heat changes state of chocolate <u>Pancakes</u> • Design pancake topping • Prepare fruit • Discuss how a sauce alters the taste of the pancake and the toppings • Heat pancakes <u>Easter chocolate nests</u> • Crush Weetabix • Break up and melt chocolate in microwave; mixing regularly • Explain heat changes state of chocolate • Decorate creation using Easter sweets <u>Pizza</u> • Chopping vegetables • Know that vegetables form part of a healthy diet • Name common vegetables • Handle, smell and taste them • Describe their appearance, taste, texture and aroma: sweet, sour, juicy, soft, hard, crunchy, crisp • Identify the different parts: skin, flesh, pip, core • Grate cheese • Decorate pizza • Cook pizza and explain how the state of the cheese changes when heated <u>Problem solving cake</u> • Independently measure and mix the ingredients • Cook in the oven • Share equally					• To reflect on the difficulties of making the soup and how one would overcome these difficulties – identify the stages of the make process that they found most challenging. • Explain why their soup could form part of a healthy diet; identify where they could make further substitutes to increase the nutritional value of the soup. • Explain why their soup reflects the seasonality of vegetables.	

Structures	<u>Cardboard box creations</u>
	• Exercising the imagination
	• problem-solving
	• designing
	• communicating
	• self-expression
	• trial and error
	• building knowledge
	• holding scissors/cutting
	• sticking using tape, glue, and wrapping string
	
	<u>*Junk modelling:* London landmarks</u>
	• Creating based on a real-life building
	• comparing and testing structures and aesthetics
	• cutting
	• sticking
			<u>Playground Equipment</u>
			• Design, purposeful, functional, appealing products for themselves and other users based on design criteria
			• Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
			• Select from a use a range of tools and equipment to perform practical tasks (for example joining)
			• Select from and use a wide range of materials and components, including construction, materials, textiles and ingredients, according to their characteristics
					<u>Bridges</u>
					• Identify various types bridges:
					  ○ Beam
					  ○ Arch
					  ○ Truss
					  ○ Suspension
					  ○ Cantilever
					  ○ Cable-stayed
					• Investigate beams and support
					• Investigate the strength of a beam
					• Identify various structures
					• Drawing diagrams, labelling, observations and findings, investigate and testing.
					• Investigation, observations and conclusions
					• Investigate and test rigidity of the support of a bridge
					• Design a bridge
						<u>Architecture Project</u>	<u>Pillars and columns</u>

	Bug hotel • Collecting natural resources • cutting using saw • using hammer and nails • designing and creating for a real-life brief		• Explore and evaluate a range of existing products • Evaluate their ideas and products against design criteria • Build structures, exploring how they can be made stronger, stiffer and more stable		• Make and test the strength of a bridge		

Textiles	Weaving capes for Supertato
	• Cutting and tearing fabrics
	• scissor skills
	• attaching/tying fabric to a stable frame
	• using the in/out weaving method
	
	Weaving and threading webs for Stanley the spider
	• Collecting natural resources
	• tying a knot
	• weaving using the in/out
		Puppets
		• Develop a design in response to a specific design brief
		• Understand the purpose of a design brief
		• Interpret a design brief
		• Practice basic, guided running stich
		• Explore ways of decorating fabric
		• Make decisions using a design specification
		• Communicate designs through drawings and discussion
		• Know that fabric can be joined using different techniques
		• Join fabric together using running stitch (pupils will be provided with the fabric pattern pieces and pre-made holes).
		• Explore and select different decorative techniques including:
		  ○ Applique
		  ○ Fabric paint
		  ○ Embellishments (e.g. sequins, beads, gems).
		• Select colours for the decorative features with intent.
		• Evaluate the success of their product
		• Compare the product with the design specification.
		• Evaluate the stages of the make process that they found the most difficult.
		• Identify what they like about their product; identify where they would like to improve it.
				Money holder/Wallet
				• Develop a design in response to a specific design brief
				• Analyse the design brief
				• Deconstruct an existing money pouch to identify how it is made
				• Identify the needs, preferences and interests of the target audience
				• Explore different techniques for joining and strengthening fabrics
				• Make decisions using a design specification
				• Use colour, embellishments and textures to include in their product to make it appealing to their target audience.
				• Communicate their designs through drawings and discussion
				• Create prototypes of their product
				• Make pattern pieces
				• Create a paper pattern piece, measuring and marking out to the nearest cm
				• Include seam allowance to allow fabric to be joined (e.g. 1.5cm)
				• Pin the paper pattern to the fabric
				• Use a variety of stitching techniques to join fabric:
				  ○ Running stitch
				  ○ Over-stich
				  ○ Blanket stitch
				• Use a variety of finishing techniques:
				  ○ Embroidery: cross-stitch to create a pattern or initials
				  ○ Applique: meaning “applied” this involves using a method of stitching/gluing patches onto fabric to provide decoration
				  ○ Embellishment: fabric paints, sequins, etc
				• Select fabrics according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern in their final product
				• Use the appropriate stitches to join the pattern pieces together to make a 3D product
							Carrier belt
							• To respond to a specific Design Brief
							• To analyse the design brief
							• To research the needs, preferences and interests of the target audience e.g. with a questionnaire
							• To research gaps in the market to design innovative products
							• To examine and deconstruct existing products to identify how they are made and what makes them structurally sound
							• To explore and select different joining techniques to make the product structurally sound
							• To explore and select different cams to create different movements, and change the direction of the movement
							• Develop a design specification to guide thinking
							• To create prototypes of the design
							• To communicate and develop design ideas through discussion, drawing and CAD
							• To propose a step-by-step method for the design
							• Understand how rotary motion can be turned into linear motion
							• Experiment with different shaped CAMS (snail cam, off centre cam, peg cam, pear shaped cam) to create different types of motion:
							  ○ Oscillating
							  ○ Reciprocating
							  ○ Linear
							• Draw out geometric shapes onto wood, ready to cut out- using a set square and ruler where appropriate
							• Cut wood safely and accurately using:
							  ○ Coping saw
							  ○ Junior hacksaw
							  ○ Drill materials using a hand drill.
							• Join materials to create the frame for the toy using wood adhesive such as PVA.
							• Evaluate the success of their product
							• Compare the product with the design specification.
							• Evaluate the stages of the make process that they found the most difficult.

				• Evaluate the success of their product • Compare the product with the design specification. • Evaluate the stages of the make process that they found the most difficult. • Identify what they like about their product; identify where they would like to improve it.			• Identify what they like about their product; identify where they would like to improve it.

Mechanisms		<u>Moving Pictures</u>
		• Develop a design in response to a specific design brief
		• Understand the purpose of a design brief
		• Interpret a design brief
		• Explore and make different mechanisms that could be used in the product
		• Make decisions using a design specification
		• Communicate designs through drawings and discussion
		• Know that a mechanism is a device used to create movement in a product: sliders and levers are examples of mechanisms
		• Know that:
		  ○ A Lever is a rigid bar which moves around a pivot.
		  ○ A Slider is a rigid bar which moves back and forth, or up and down along a straight line. Unlike a lever, a slider does not have a pivot point.
		  ○ A wheel mechanism is a circular mechanism that spins around one pivot point.
		• Make a lever: make a small hole for the pivot by pushing a pencil through card into plasticine (or equivalent)
		• Make a slider: make guides/bridges using strips of card fixed with masking tape
		• Cut card safely using scissors provided.
		• Create a moving image using a lever mechanism and slider mechanism.
		• Explore who and what products are for, how they work and are used, what materials they are made from and what they like and dislike about them.
		• Students can explore objects and designs to identify likes and dislikes of the designs.
		• Students can identify which mechanism is used to create a pre-made moving picture (slider, lever, wheel).
			<u>Moving Vehicles</u>
			• Develop a design in response to a specific brief
			• Make and explore different wheel mechanisms and the effect on motion
			• Identify the preferences and interests of their target audience
			• Use a specification to help them make decisions and design their product
			• Use colour, prints, images and textures to include in their product to make it appealing to their target audience.
			• Communicate their ideas through drawings
			• Know the parts of a moving vehicle:
			  ○ Axle: a rod on which one or more wheels can rotate
			  ○ Axle holder: the component through which the axle fits and rotates freely
			  ○ Chassis: the frame or base on which a vehicle is built
			• Make different types of wheels:
			  ○ To make wheels that are fixed to an axle and rotate with the axle
			  ○ To make wheels that are fixed loosely to the axle and can rotate
			• Make three types of moving axles, using different axle holders:
			  ○ Using clothes pegs
			  ○ Using card triangles
			  ○ Using plastic straws
			• Attach wheels to axle in two different ways: using glue and using a stopper
			• Make simple judgements about their products and ideas against design criteria
				<u>Puppets</u>
				• Develop a design in response to a specific design brief
				• Analyse the design brief
				• Research existing puppets to see how they are made and how they move
				• Identify the needs, preferences and interests of the target audience
				• Explore different lever and linkage mechanisms
				• Make decisions using a design specification
				• Communicate their designs through drawings and discussion
				• Create a design that uses colours, textures and decoration that will appeal to the target audience
				• Create prototypes of the product using paper and card
				• Draw their final design using Computer-aided design (CAD)
				• Make different lever and linkage mechanisms:
				  ○ Linear
				  ○ Reciprocating
				  ○ Rotary
				  ○ Oscillating
				• Use lever and linkage mechanisms (linear, reciprocating and oscillating) to make different pivots:
				  ○ Loose pivot: join card strips together using a paper fastener
				  ○ Fixed pivot: a fastener is used to join card strips to the backing
				• Make holes for pivot points using sharp pencil plasticine/blu tac
				• Place pivot points accurately to create desired effect
				• Know that systems have an input, process and an output:
				• In a lever and linkage mechanism, the 'input movement' is where the user pushes or pulls a card strip.
				• The 'output movement' is where one or more parts of the picture/object moves		

Electrical Systems					<u>Night Lights</u>
					• Develop a design in response to a specific design brief
					• Analyse the design brief
					• Identify the preferences, needs and interests of the target audience
					• Explore existing night-lights to take inspirations from their external design
					• Explore and make an electrical circuit with a switch
					• Explore and select materials based upon their properties to make the shade for the product
					• Explore and select the 3D shape for the shade
					• Select colours, textures and designs to appeal to the target audience
					• Create prototypes of the product using paper and card
					• Draw final design using Computer-aided design (CAD)
					• Understand that a circuit must be complete to function
					• To build a simple circuit that includes a battery pack, switch and a light bulb
					• Secure the circuit to a base
					• To create a simple switch:
					  ○ Paper clips
					  ○ Paper fasteners
					  ○ Tin foil on card
					• To make a fabric cube shade:
					  ○ Make square paper patterns (use a ruler)- leave 1.5cm
					  ○ Pin the paper patterns to felt
					  ○ Cut round the paper patterns with fabric scissors
					  ○ Mark the seam allowance on the felt
					  ○ Add embellishment to the shade using sequins, felt pieces and paints
					  ○ Stich five squares together using running stitch or backstitch
						<u>Alarming Vehicles</u>
						• Develop a design specification for a functional product that responds automatically to changes in the environment.
						• Generate, develop and communicate ideas through discussion, annotated sketches and pictorial representations of electrical circuits or circuit diagrams.
						• Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.
						• Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.
						• Create and modify a computer control program to enable their electrical product to respond to changes in the environment.
						• Continually evaluate and modify the working features of the product to match the initial design specification.
						• Test the system to demonstrate its effectiveness for the intended user and purpose.
						• Understand and use electrical systems in their products.
						• Understand the use of computer control systems in products.
						• Apply their understanding of computing to program, monitor and control their products.
						• Know and use technical vocabulary relevant to the project.	